



USAMRIID's Contagious Casualty Evacuation and Care Capabilities

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2 components:

- Special Medical Augmentation Response Team for Aeromedical Isolation (SMART-AIT or “AIT”)
- BSL-4 Medical Containment Suite (MCS)

AIT CONCEPT

A rapid response team that can deploy to any area of the world foreign or domestic to transport and provide medical care under high containment to a limited number of patients exposed to, or infected with highly contagious, potentially lethal pathogens.

AEROMEDICAL ISOLATION TEAM (AIT)

- **Worldwide mission-capable (with USAF transport) for evacuation of highly infectious casualties**
- **Only BSL- 4 capable patient transport in US**
- **Special isolator units used to contain and transport patients**
- **Two 8-12 person deployable teams**
 - **Each team can transport and manage one patient**



Team Composition

- 1 Medical Director, Medical Corps (AOC non-specific)
- 1 Officer-in-Charge, Army Nurse Corps, AN (AOC non-specific)
- 1 Non-Commissioned Officers-in-Charge (NCOIC)(MOS 91W30/40)
- 6 Health Care Specialists (MOS 91W/91K/91T).
- 1 Veterinary Technician (MOS 91K).

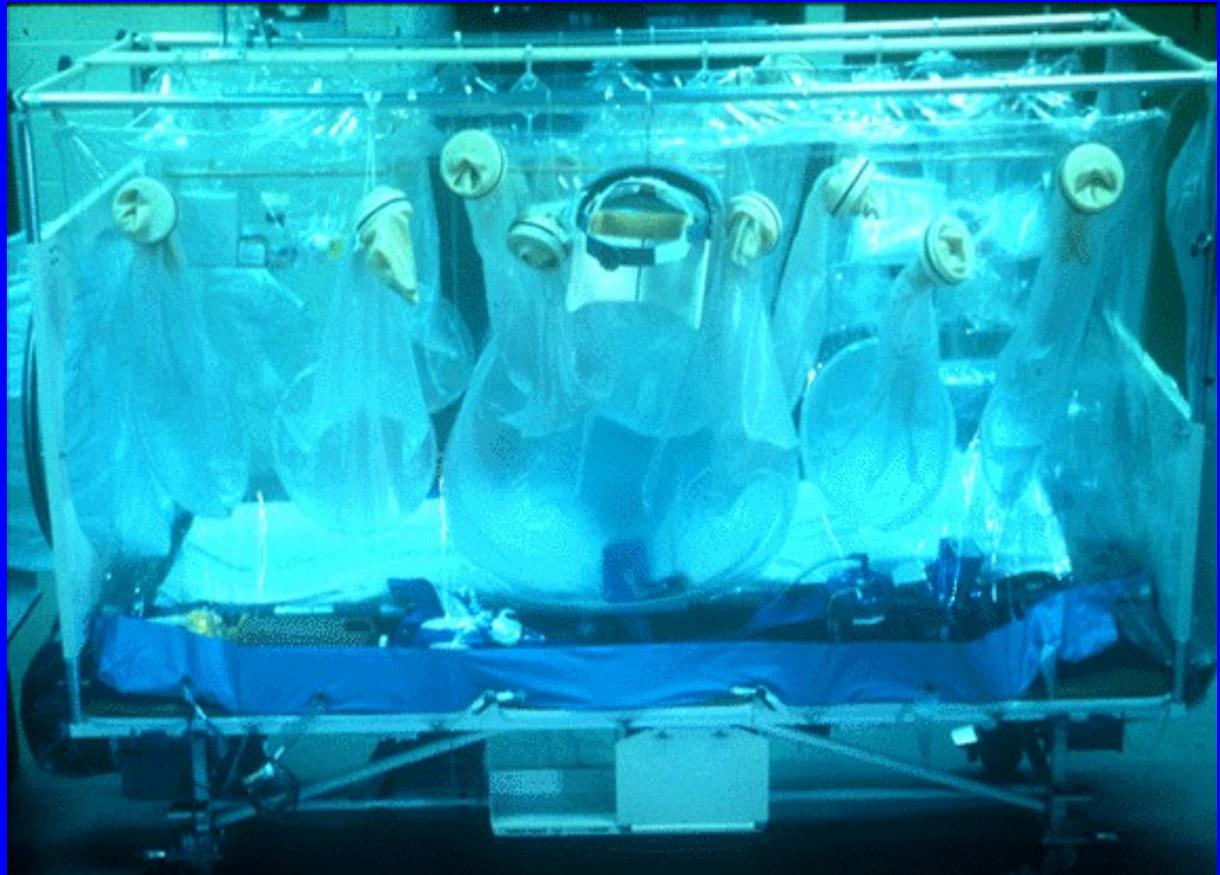
Major Equipment (total)

- Aircraft Transit Isolators - 2
- Stretcher Isolators - 4
- Laboratory Bench Top Isolators - 2 (mission dependent)
- Protective Over garments w/HEPA filters (RACAL)-20
- Defibrillator, Portable with Monitor - 3
- Portable Gas-powered Generators - 2
- Infusion Pumps - 4
- Suction Apparatus - 4
- Basic EMT/Paramedic Drugs/supplies



AIRCRAFT TRANSPORT ISOLATOR (Vickers-Trexler)

- **Transparent PVC**
- **Two half suits to improve patient care**
- **Battery or aircraft power operated**
- **Suitable for :**
 - **C-130 or C-141 aircraft**
 - **Some Rotary Wing Airframes**
- **Dimensions:** 87 X 60 X 36 in; Wt 247 Lbs.
- **Designed to remain on the waiting aircraft.**



STRETCHER ISOLATOR

- **Specially Equipped Standard NATO Litter**
- **Transparent PVC**
- **HEPA Air Filtration System**
- **Battery Powered (Up to Six Hours Per)**
- **Patient Care Access Limited Once Contained**



FIELD LAB ISOLATOR

- BS-4
 - Negative pressure
 - HEPA filtered

-Deployed to Bronx Zoo, NY.
(West Nile virus outbreak, 1999)



AIT CAPABILITIES

- **Can deploy two teams simultaneously**
- **Each team can transport and manage one patient**
- **Portable containment laboratory**
 - **Rapid diagnosis- ELISA, etc**
 - **Standard clinical laboratory**



PRIMARY METHODS OF TRANSPORT

Rotary Wing

- Ch-47
Chinook



PRIMARY METHODS OF TRANSPORT

Fixed Wing

- C-130
- C-141
- C-17







CH-47 Load Configuration



C-130 Load Configuration





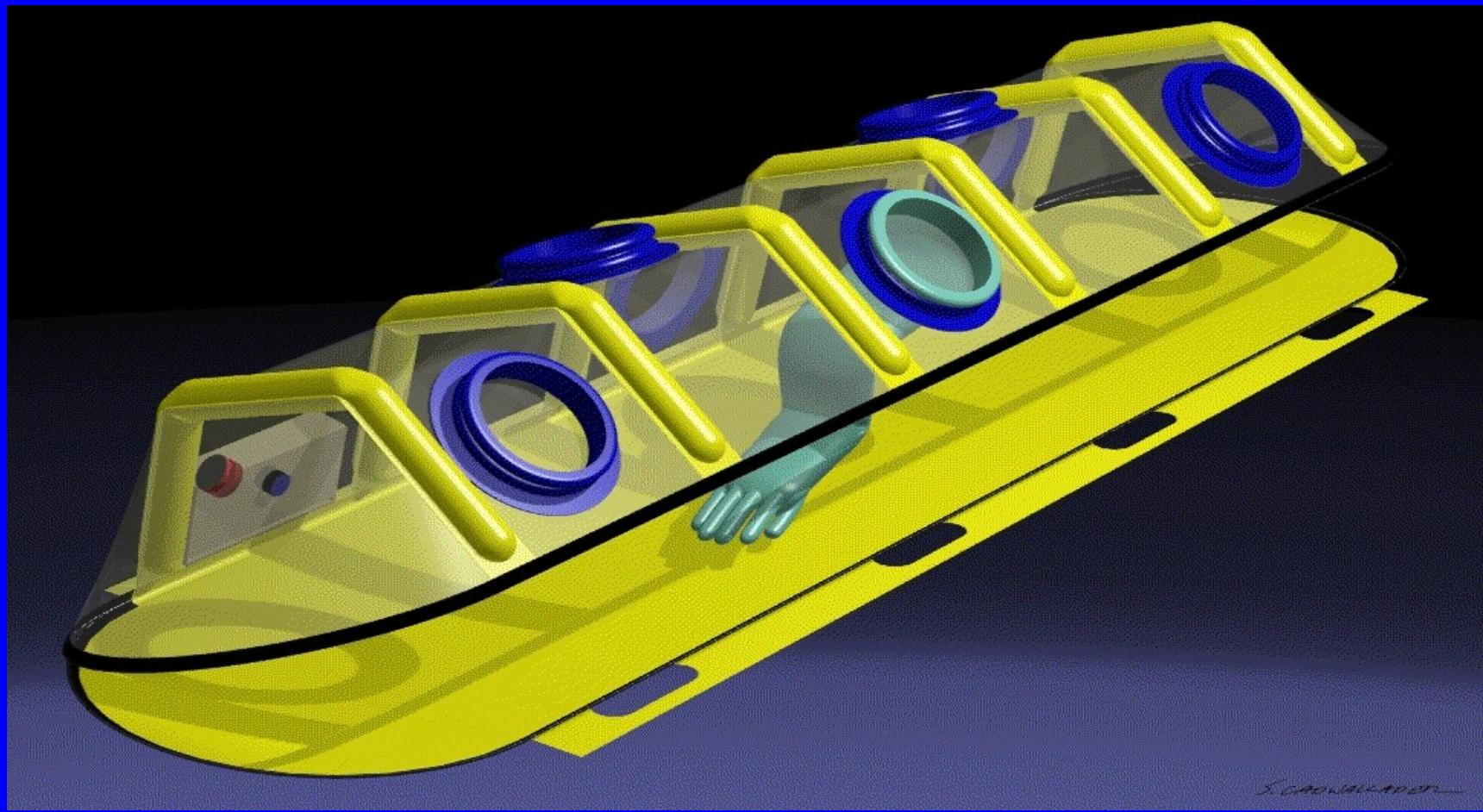


Problems

- Very limited capability
- No specific Funding
- No clear Mission Statement
- No clear procedure for:
 - requesting services
 - Transport of team
- Legal issues:
 - interstate/international transport
 - Civilians/non-US nationals
- Interservice issues
- Treatment facilities capable of receiving patients

ALION PROPRIETARY AND CONFIDENTIAL

Individual Isolation Pod



BSL-4 MCS

**“Ward 200” of
WRAMC**

- **Two BSL-4 patient rooms**
- **BSL-4 “surgical suite”**

- **Primary mission:** to provide containment for USAMRIID lab workers exposed to BSL-4 agent
- **Secondary:** to provide some level of care to these patients.
- **Tertiary:** care to others from outside institute?

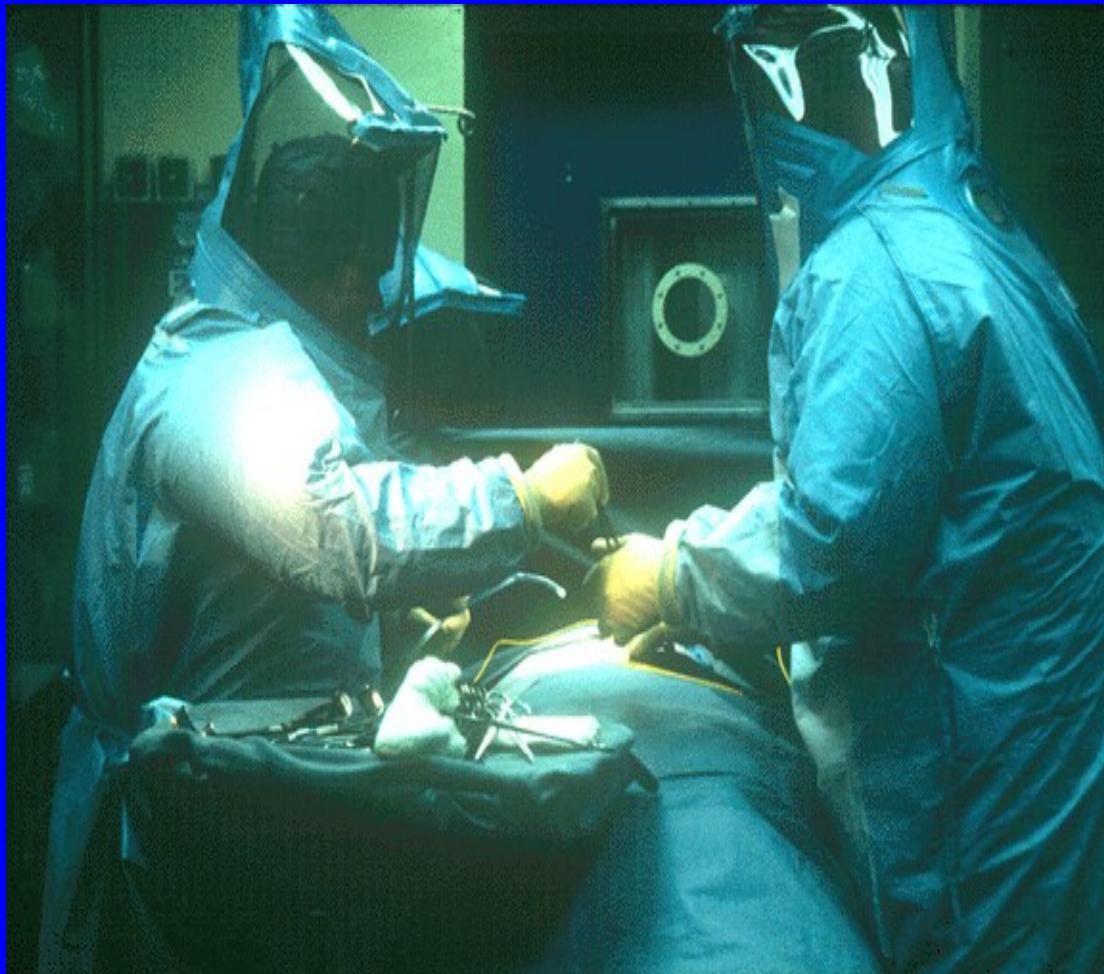


MCS capabilities

- “~ ICU” level care for up to 2 patients with exposure to same agent (4 pts?)
- Staff:
 - Initially USAMRIID, then
 - Walter Reed Medical Team (MAT)



High Containment Operating Room



Problems with MCS

- Limited Capability
 - No blood bank, pharmacy, sub-specialists, anesthesia on site
 - Limited radiology (plain X-ray only), limited clinical lab
- No clear funding
 - Supplies from WRAMC
- No Clear MOU with WRAMC
- No Clear Mission Statement
 - Level of care?
- Legal Issues:
 - Accreditation/Standard of Care
 - Care of other-than-DoD personnel
 - Transport of pts across borders to MCS

Summary

- USAMRIID has some capability to transport and care for BSL-4 level contagious casualties, but it is limited
 - “Andromeda strain” or ≤ 2 patients
- Many issues must be sorted out before maximally effective:
 - Funding/staffing
 - Scope of mission
 - legal

Questions?



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AOR



BAS

BAS



"ID EMEDS"



ACC



Treatment in Place

Resupply:

- PPE
- Meds
- Vents
- Etc...



ACC

Tertiary
MTF

CONUS or
other

- Need capability to receive and care for

SMART - Aero-Medical Isolation Team (SMART-AIT)

(1) On order, the team assembles and deploys within 12-hours. It provides professional aero-medical isolation capability (technical advice and support) to local medical authorities in the management of events, incidents and consequences associated with infected patients.

(2) Provides a rapid response evacuation unit to any area of the world to transport a maximum of two patients simultaneously.

(3) Provides patient care under conditions of biological containment to service members or civilians exposed to or infected with certain contagious diseases.

AIT DEPLOYMENTS

- Deployed to Reston, Virginia, Ebola outbreak, 1989
- Deployed to Sweden in support of Marburg patient management, 1989
- On call for Yale researcher with Sabia virus exposure, 1994
- Alert for Ebola, Zaire outbreak, 1995
- Deployed to Wright-Patterson AFB, Bio-bomblets, Dec 1995
- NYC, Bronx Zoo, West Nile virus, Oct 1999
- Alert to support with possible Ebola exposure in Uganda, Africa in December 2000

